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The Nature, Prevention and Remediation of
Literacy Learning Difficulties

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Introduction

There continues to be debate among researchers of dyslexia about not only the most effective interventions but about the very nature of the 'disability' (Davis & Braun, 2010; Poole, 2003; Shaywitz, 2003). This debate has produced a plethora of interventions that vary from 'snake oil merchants' to the most popular literary-based interventions hinged on developing phonological awareness. In relatively recent times the word 'neurodiversity' has been touted as a more holistic and inclusive term for dyslexia and other 'disorders' such as Autism Spectrum Disorder and Attention Deficit Disorders (Cooper, 2004; D. Griffiths & Horobin, 2018; Lewiecki-Wilson, Dolmage, Heilker, & Jurecic, 2008). Riddick (2001) has discussed how the clinical model of dyslexia has resulted in making an impairment into a disability, and questions whether

in the spirit of inclusion this would suggest that as well as an intervention model focused on 'improving' children's performance we need to consider whether a social model which challenges some of our beliefs and assumptions about literacy is needed (Riddick, 2001, p. 224).

The preponderance of research evidence lies with the literary interventions within a medical/scientific perspective because, firstly, the proximal causes are evident in the educational setting and therefore much of the research is obviously done at this level and secondly, the use of medical imaging such as functional MRI (fMRI) has relatively recently been used to map brain function in connection with reading disorders (Fawcett & Nicolson, 2004; Poole, 2003; Riddick, 2001; Shaywitz, 2003; Shaywitz, Morris, & Shaywitz, 2008). Although I understand that this essay is predominantly about the clinical/educational view of reading disability, I think it important to include a mention of the social model and 'neurodiversity' (Cooper, 2004; Riddick, 2001; The Festival of Dyslexic Culture, 2010), introducing the 'human' perspective, especially as I am a developmental dyslexic with a lifetime of experience of this particular 'disability'. In this essay I will demonstrate my awareness and knowledge of the more conventional phonological deficit theories around dyslexia and their associated interventions. However, I am going to explore the possible validity of the concept of neurodiversity and different forms of thinking, some of the underpinning theories

especially pertaining to one particular intervention, Davis Dyslexia (Davis & Braun, 2010) and its effect on word recognition, spelling and reading, in greater detail.

Evidence-, literary-based intervention

The simple view of reading [SVR] (Gough & Tunmer, 1986) makes identification and classification of reading difficulties less complicated and is a useful model to be applied in classroom practice. Along with the response to intervention model (RTI), the proximal causes of poor readers can be identified and appropriate intervention arranged to address their needs at a fitting level (Tunmer, 2008; Tunmer & Chapman, 2012; Tunmer & Greaney, 2010). Dyslexia, as defined by this model, is considered to be a deficit in phonological skills such as phonemic awareness and decoding. This is in the presence of 'normal' listening comprehension. Poor decoding and recoding leads to poor word recognition, which further leads to diminished reading comprehension and poor spelling (Gough & Tunmer, 1986; Snowling & Hulme, 2011; Tunmer & Chapman, 2012; Tunmer & Greaney, 2010). In the light of the SVR it follows that intervention or remediation for a dyslexic poor reader would concentrate on developing the phonological skills that are lacking (Shaywitz, 2003; Tunmer, 2007). The predominant New Zealand (NZ) intervention for at risk readers is Reading Recovery (RR), to which many resources have been applied over the last thirty years or so. However, RR has been shown to come up short as a comprehensive intervention, especially considering the most at-risk readers (Center, Freeman, & Robertson, 2001; Chapman, Greaney, & Tunmer, 2007; Tunmer, Chapman, Greaney, Prochnow, & Arrow, 2013). This short-fall has been contributed to: the lack of systematic, explicit teaching of phonics; a 'wait-to-fail' policy due to the fact that poor readers are only assessed after a full year at school; the intake policy; and the fact that it does not seem to make much difference to the most at-risk readers, especially those who come from the lowest socio-economic sectors (Chapman et al., 2007). Tunmer et al. (2013) questioned the NZ constructivist teaching of reading and RR policies, mentioning the poor performance in the PIRLS 2011 report. Things had worsened by the 2016 report (Mullis, et al., 2017; Tunmer, 2008). Tunmer (2008) has not proposed 'throwing the baby out with the bath water' but simply extending the RR sessions with short periods

of explicit, instruction of synthetic phonics as proven effective by the Early Steps intervention program developed in the U.S.A. The reading wars rage on.

There is no denying that research evidence points to the need for the explicit teaching of phonics at the early stages of reading instruction as best practice. The ability to decode and recode is essential for working out novel words and building up an internal lexicon of recognised words that, with practice, help to develop fluency and comprehension (Champman & Tunmer, 2015; Shaywitz, 2003; Shaywitz et al., 2008; Snowling & Hulme, 2012; Tunmer, 2008; Tunmer et al., 2013). Automatized word recognition is essential in later stages of reading in order to free up cognitive ‘space’ for comprehension (Shaywitz, 2003; Snowling & Hulme, 2011, 2012; Tunmer & Chapman, 2012). It would follow that an evidence-based early reading program would include explicit and structured teaching of phonics as a matter of course (Kamhi & Catts, 2014; Shaywitz et al., 2008; Snowling & Hulme, 2011; Tunmer & Greaney, 2008). This strategy works at the basic level to help most students succeed later on. For the most at-risk readers intensive phonics training programs such as Early Steps, at a second tier level, have proven to be “highly effective and produced greater gains in poor readers than either the remedial reading program [RR] or phonological training on its own” (Tunmer, 2008, p. 304). Also, “good classroom-level interventions are estimated to reduce the number of at-risk readers from 25% of the population to 6%” (Brock, Davis, & Christo, 2009, p. 2). It is the 6% with whom there is concern and who need effective and efficient third tier intervention, and around whom my discussion will revolve later on.

Paradigm Shift

In fairly recent years there has been an upsurge of support for inclusive values and practice, especially when dealing with the specific learning difficulty of dyslexia (Collinson, 2012; Cooper, 2004; Griffiths & Horobin, 2018; Redford, 2017; Rentenbach, Prislowsky, & Gabriel, 2017; Riddick, 2001). Cooper (2004) suggests that there is a need for a paradigm shift from dyslexia being defined as a purely literacy-based disability caused by a phonological deficit to being seen as a different way of processing text, in other words, a learning difference. This view is shared by many who now acknowledge that there is an argument for the term ‘neurodiversity’ when

speaking about dyslexia because of the burgeoning research on brain function and neurological epistemologies for this reading 'disability'. There has also been an increased number of dyslexic researchers studying and contributing to research from a subjective stance (Armstrong, 2015; Brock et al., 2009; Fawcett & Nicolson, 2004; Griffiths & Horobin, 2018; Griffiths, 2012; Kalantzis, 2004; Marshall, 2005; Poole, 2003; Redford, 2017; S. Shaywitz, 2003). There is an argument that the clinical/educational view of dyslexia does not adequately describe, acknowledge or support the dyslexic person and that the focus on 'remediation' is not only futile but damaging to the developmental dyslexic (Collinson, 2012; Riddick, 2001; The Festival of Dyslexic Culture, 2010).

Developmental dyslexia and neurobiological research

It could be argued that the previously mentioned 6% of at-risk children who do not respond adequately to evidence-based instruction and intervention at a second and third tier level, are the ones who can be referred to as 'neurodiverse' or biological/developmental dyslexic readers (Armstrong, 2015; Griffiths & Horobin, 2018; Shader, n.d.; Shaywitz, 2003). Research on [brain function](#) in both normally progressing readers and dyslexic readers has shown empirically that the dyslexic brain functions differently to the skilled reader's brain (Fawcett & Nicolson, 2004; Shaywitz, 2003; University of California Television (UCTV), 2015). It is now known that a skilled reader has a specific brain pattern when reading, using three specific areas: The occipito-temporal area is the word-form and automatization area at the back of the brain. The parieto-temporal area is the word analysis part of the brain, connected to auditory processing and responsible for phoneme detection and assimilation. Finally, Broca's area or the inferior frontal gyrus at the front of the brain, is the area to do with articulation. This brain activity takes place predominantly in the left side of the brain. In a dyslexic-reader's brain, however, this pathway is not the same (Shaywitz, 2003; University of California Television (UCTV), 2015). Below, in *Figure 1*, it is obvious that the dyslexic reader does not use the parieto-temporal area (auditory/phoneme processing) and much of the brain activity happens in the right hemisphere of the brain. These images not only prove that dyslexia is a neurobiological condition, they also give tremendous insight into the underlying causes of the phonological deficits

that are symptomatic of dyslexia, as the dyslexic brain does not use the parieto-temporal area when performing reading tasks (Fawcett & Nicolson, 2004; Marshall, 2017; Shaywitz, 2003). The right hemisphere has long been associated with imaginative, creative, divergent thinking, while the left with sequential, logical, convergent thinking ([Letzter & Writer, 2011](#)). The dyslexic employs the right hemisphere for what is essentially a left hemisphere function, which infers that they think differently to the norm when, not only performing literacy tasks, but when learning in general (Cooper, 2004; Davis & Braun, 2010; Fawcett & Nicolson, 2004; Marshall, 2017).

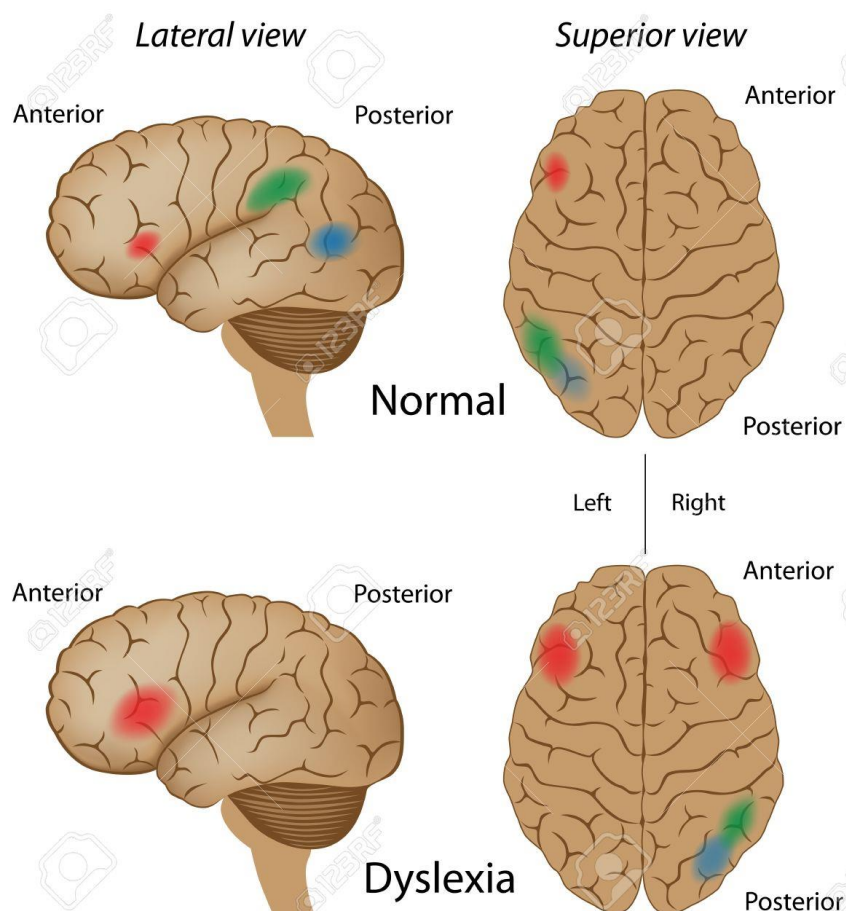


Figure 1 Normal vs Dyslexic reading brain (123RF,n.d.)

Although studies have shown that intensive, systematic phonics programs actually change the neural pathways of dyslexics with accompanying reading accuracy, fluency and speed eludes them (Shaywitz, 2003; Shaywitz et al., 2008; Snowling & Hulme, 2011). More recent studies (Marshall, 2017; Waldie, et al., 2017) have shown that “dyslexic individuals who become good readers have a different pattern of brain use than either non-dyslexic readers, or dyslexics who still read poorly” (Marshall, 2017, para. 6). In a study done by Rumsey and Horwitz (as cited in Marshall, 2017) using positron emission tomography (PET) to compare cerebral blood flow in non-dyslexic and dyslexic (with varying reading capability) men, it was noted that while all dyslexics “showed less activation of the left posterior and temporal areas of the brain” (Marshall, 2017, para. 8), the capable-dyslexic readers relied more on right brain areas than poor-dyslexic readers. The persistently poor-dyslexic readers showed left brain activation in the posterior and temporal systems, whereas the dyslexic-capable readers seem to bypass the area completely (Marshall, 2017). The implications of this are that changing the brain patterns of dyslexics by repetitive, intensive phonics could actually be detrimental to them by decreasing reading ability. It would seem that capable dyslexic readers develop an alternative brain pattern for reading that is more sustainable (Marshall, 2017). This would support Cooper’s (2010) argument “that the ‘difficulty’ [associated with being dyslexic] is merely a response to the educational expectation. They are no more a deficit than being required to use a right hand when you are left-handed” (p.5).

This right-brain tendency of dyslexic thinkers makes them particularly imaginative and creative, predominantly visual in their thinking and more ‘holistic’ thinkers (Cooper, 2004; Davis & Braun, 2010; Engelbrecht, 2005; Poole, 2008; van Staden, et al., 2009). It has been postulated by Cockcroft & Hartgill (as cited in van Staden et al., 2009) and Davis & Braun (2010) that dyslexics think predominantly in pictorial form as opposed to verbally, which would account for the predominantly right hemisphere activation. As a dyslexic myself, I can corroborate this, as I do think in pictures rather than words and never thought there was another way of thinking until I read about it as an adult. These conceptual pictures are not simple two-dimensional animations, but three-dimensional, easily manipulated, interactive pictures, much like a motion picture

(Carson & Sorin, 2017; Davis & Braun, 2010; DavisDyslexia, 2007; Engelbrecht, 2005; Poole, 2008; Rekha, 2010). This conceptual way of thinking, caused by the “cross lateralization of the brain” (Davis & Braun, 2010, p. 7), does not lend itself easily to deductive, sequential learning, but rather prefers inductive, big picture approaches to learning (Cooper, 2004; Davis & Braun, 2010; Engelbrecht, 2005; Pfeiffer et al., 2001; Poole, 2008; van Staden et al., 2009). Those who think predominantly using the right hemisphere, need to visualise and understand the contextual meaning of any given information before they are able to understand the constituent parts (Poole, 2008). This is the antithesis of how conventional education operates (Cooper, 2004). Therefore, “if students are Three Dimensional Visual Thinkers, they could benefit from a different approach to learning to spell [and recognise words]; one that does not rely on phonics and rules, but rather on the understanding of what a word means, how it is spelled and how it is said” (Carson & Sorin, 2017, p. 2). Andrews (as cited in Carson & Sorin, 2014) suggested that students who struggle with phonological skills need to rely on alternative visual, whole-word strategies to read. In other words, because dyslexics have different thinking processes, it would be beneficial to align any intervention with their thinking, rather than remediate their thinking by trying to ‘rewire’ their brains through intensive phonics programmes.

The Davis Dyslexia Program

The Davis Dyslexia program is a one-to-one program when conducted by a trained facilitator, conducted over 30 – 40hrs. Continued work at home is expected using the Symbol Mastery techniques (DavisDyslexia, 2007). However, trained facilitation is not necessarily imperative. Davis (1994) wrote all the instructions for his techniques down in his book “The Gift of Dyslexia”. These precise instructions have been used in research studies globally. I will now describe and discuss the three main components of the program in some detail.

Orientation Counselling

Ronald Davis (1994) postulates that dyslexia is simply the negative outcome of what he refers to as ‘disorientation’ (Davis & Braun, 1994, 2010; Poole, 2008). He explains this by saying that there are two ways of thinking: verbal conceptualization and non-

verbal conceptualization (Davis & Braun, 1994, 2010). Dyslexics are primarily non-verbal thinkers. The characteristics of non-verbal thinking are: Pictures are built as concepts are encountered and assimilated; the thought process is significantly faster than verbal thinking because many concepts are presented as pictures, whereas verbal thought is limited to the same speed as speech; picture thinking is multi-dimensional, not linear in nature; and non-verbal thinking is subliminal (Davis & Braun, 1994, 2010). When dyslexics read “they are composing a mental picture by adding the meaning-or image of the meaning-of each new word as it is encountered”(Davis & Braun, 2010, p. 11). Words describing concrete concepts that can be experienced don’t cause much trouble for dyslexics. Shaywitz (2003) noted “many dyslexic readers complain of difficulties in reading the little words such as *in, on, the, that, and an*”(Shaywitz, 2003, p. 111). Davis (1994) states that because non-verbal thinkers are developing a conceptual picture of the meaning as they read

“the evolutionary development of the picture being formed by the sentence is stopped each time the meaning of an unknown word cannot be incorporated into the overall picture. The problem will be compounded every time [they] come across a word whose meaning does not have a corresponding mental picture” (Davis & Braun, 2010, p. 12).

This results in incoherent pictures interspersed by blank spaces. Each time the picture-making process is interrupted, the reader experiences confusion. This confusion accumulates until they reach a threshold and become ‘disoriented’. When a dyslexic cannot understand something their perception disorientates “in order to be able to look at it from different perspectives in their mind” (Engelbrecht, 2005). Disorientation is spontaneous and results in distorted perceptions of the letters and symbols being read, and hinders, if not halts, the ability to read (Davis & Braun, 1994, 2010; Engelbrecht, 2005). This theory corresponds with the [neuro-linguistic programming \(NLP\)](#) theory of distortion of perception due to an individual’s use of specific mental ‘filters’ when processing sensory stimuli. The dyslexic thinker unconsciously manipulates images created while reading in an attempt to create meaning (having bypassed the auditory processing area of the brain) causing distorted perceptions of the symbols being read (Davis & Braun, 2010; Dreaming Son, 2014; Engelbrecht, 2005).

Davis (2010) says the symptoms of this disorientation are what collectively manifest as dyslexia.

This phenomenon is corrected through “orientation counselling” (Davis & Braun, 2010), where, using the subject’s imagination, their mental point of perception, or their “mind’s eye” is anchored and stabilised, counteracting disorientation and distortions.

Symbol Mastery



Figure 2: Symbol mastery clay modelling (Davis Dyslexia Association International, 2018)

“Symbol Mastery” is a process “used to create a meaningful visual image from clay for all the triggers of disorientation. For the dyslexic, a word has three parts: what it means, what it looks like and what it sounds like” (Poole, 2008, p. 87). The process utilizes all three aspects. There are over two hundred “trigger” words (Davis & Braun, 2010): high-frequency words for which there is no concrete representation. Symbol Mastery begins with looking up the meaning of a trigger word in the dictionary, checking its pronunciation and then verbally using it in full sentences, giving it context. Once the correct meaning of the word is established a three-dimensional clay model is made to represent the meaning along with the symbolic representation [see figure 2] (Davis Dyslexia Association International, 2018). Orientation is established and then the meaning is reiterated. The subject then touches each clay letter saying the name of the letter (not the sound), closes their eyes, mentally replicates their model and then verbally spells out the word forwards and backwards (Davis Dyslexia Association International, 2018; Davis & Braun, 2010; Poole, 2008). This process takes on a multi-sensory aspect in the program, utilizing the dyslexic’s creativity and way of thinking to

create mental representations of the most common trigger words which make up 75% of language. These images now replace the gaps in the dyslexic's image production and disorientation is avoided (A. Fiaola, personal communication, November 3, 2018).

Sweep-Sweep-Spell

In this technique, the student works with a support person, reading out loud. When an unfamiliar word is encountered it is spelled out letter by letter and the support person says the word, before the student moves on.

As a typical reader becomes more fluent, their reading brain pattern changes and they use the occipital-temporal area (in the visual cortex, in the rear left of their brain) to receive visual stimuli (words), instead of relying on the parieto-temporal area, unless they encounter an unknown word. This is when the internal lexicon has reached a critical mass, so to speak, and reliance on phonological decoding diminishes. As automatization increases, known words are recognised and understood subliminally (Marshall, 2005; Snowling & Hulme, 2011). Letter-strings/words are received and recognised in the occipital-temporal area or the "Visual Word Form Area" (VWFA). Activity then moves to the part of the brain where the meaning of the word is processed, the parieto-temporal region, where once "sounding out" occurred but now assigns meaning to words. The VWFA serves as a "storage bin" (Marshall, 2005, p. 1) for familiar words and is where the lexicon is stored. Research has shown that in dyslexic readers, however, The VWFA is all but bypassed with more activity experienced in the right-frontal regions which deal primarily with detecting patterns and puzzle solving. So while a typical reader has instant word-recognition, the dyslexic reader relies on the time-consuming, analytical thought processes to recognise words (Marshall, 2005). Word recognition, in typical readers, begins with the visual cortex receiving visual stimuli which "evoke a response from different specialized sets of neurons...The process by which the brain reassembles the information is called *binding*" (Marshall, 2005, p. 3). Binding only happens when all the neurons associated with the stimuli fire simultaneously and are synchronised. In order for the brain to recognise a letter-string as a word it must retain information about letter order. The sweep-sweep-spell technique is thought to exercise the letter-recognition neurons

while developing a habit of sequencing the letters in the appropriate order, increasing retention of letter order information and word recognition (Marshall, 2005).

Research and Evidence

There is evidence that the Davis Dyslexia (DD) program is a highly effective and efficient intervention for the development of literacy in dyslexic thinkers. Many studies have small sample groups but this can be explained by the relative size of the dyslexic population and the purposive sampling employed in these studies. There is a variety of research methods represented ranging from comparative studies to case studies (Amsberry, et al., 2012; Engelbrecht, 2005; Pfeiffer et al., 2001; Rekha, 2010; Wah, 2010).

In 1981 Davis and Dr Fatima Ali, a clinical and educational psychologist, joined forces to form the Reading Research Council (RRC) in California. In 1982 the RRC was open to individual clients for dyslexia correction services. Between 1982 and 1984 pre- and post-programme testing, using McGraw-Hill's Comprehensive Test of Basic Skills, was done on 110 clients (24 female and 86 males), whose ages ranged from 6 to 61 years. An average increase of 21 percentile points was observed in reading and an average increase of 17 percentile points in language (Marshall, 2018).

In 2002 a Canadian study was done at a Davis facilitator centre in Calgary. Again, pre- and post-program testing was done, using the Ekwall-Shankar Reading Inventory this time. 360 client participants were tested and there was an average improvement of almost four grade levels over the course of the 5 day program. More than a third of participants had increases of 5 or more grades, while about three-quarters improved their reading skills by at least 3 grade levels. Improvement had a positive correlation with age: 13 to 18 year olds' average increase was almost 5 grade levels and 19-57 year olds increased by an average of 6 grade levels (Marshall, 2018).

In 2001 Pfeiffer et al. wrote a report on a pilot, school program based on Davis techniques which had been modified for small group use with grade one students. The aim of the study was to observe the impact the Davis strategies, particularly symbol mastery, had on word recognition in first graders and consequent referral rates. This was a comparative study using whole class cohorts. The Davis groups

“scored significantly higher than the control groups for mastery of 100 basic sight words. In addition, follow-up data indicated that no special education referrals had been made two years after the initial Davis intervention for any of the three pilot classrooms. However, gifted referrals from these same classrooms were higher than the typical school population” (Pfeiffer et al., 2001, p. 1).

A comparative study done in Italy (Tressoldi et al., 2003) between eight different interventions for dyslexia, showed that the students who were in the DD group had the greatest increase in reading speed and read at a rate double or triple the speed of students in the other seven groups. Attention-focus was noted to have improved. The DD group received fewer hours of intervention and it was therefore concluded that DD strategies were the most effective and cost effective of the intervention for dyslexia (Marshall, 2018; Tressoldi et al., 2003).

Two South African studies have shown DD methods to be effective (Engelbrecht, 2005; van Staden et al., 2009). van Staden et al. (2009) studied the effect of DD strategies on reading and spelling for 18 dyslexic children over 9 months. These children’s progress was compared to a similar control group “who were not exposed to the literacy intervention programme” (van Staden et al., 2009, p. 295). As well as the DD group performing significantly better in both reading and spelling than the control group, “learners’ concentration improved, better self-concepts developed and speech- and behaviour-related problems improved” (van Staden et al., 2009, p. 303). Engelbrecht (2005) studied the effect of DD “on the reading ability and psychological functioning of children” (Engelbrecht, 2005) with 10 Afrikaans speaking, dyslexic, grade 5-7 children. A control group of a further 10 dyslexic children was included. Engelbrecht concluded that “Davis techniques indeed do have a positive effect on the reading ability of individuals over a short period of time” (Engelbrecht, 2005) and she goes on to say “such an intervention programme could have very positive results as far as inclusive education is concerned”(Engelbrecht, 2005).

A study done in Australia by Carson & Sorin (2017) focused on symbol mastery (SM) showed good results. This case study, done in 2014, looked at the effectiveness of SM on learning and retaining the spelling of Dolch words (high frequency words) on a

small group of dyslexic students who were having difficulty with spelling. All in the group improved significantly. Another case study done by Wah (2010) describes how the DD strategies were used to “correct [his subject’s] dyslexia symptoms” (Wah, 2010, p. 133). Wah (2010) concluded that observations and results warranted “a need for more independent and larger scale studies on the Davis model of looking at dyslexia” (Wah, 2010, p. 138).

There is strong evidence that the DD strategies are effective and efficient, however there is a need for a greater volume of peer reviewed research, with a bigger population of dyslexic thinkers in order to gain traction and secure validity. These studies as well as anecdotal results warrant a further investigation into these strategies at not only an implementation level but at a neurological/biological level. I have experienced the DD strategies as a ‘client’ and a teacher. Personally, these strategies transformed my reading fluency and ability to focus. I have witnessed remarkable transformations in students when using these techniques, not only in their literacy, but also in their agency, behaviour and self-esteem.

Conclusion

Although there is a preponderance of research on the literary, phonemically-based interventions for dyslexia, relatively recent medical imaging of brain function comparing typical readers with dyslexic readers has acknowledged a neurobiological cause. Along with this acknowledgement has come a surge of support for a more inclusive, socially defined approach to ‘specific learning disabilities’, calling for a paradigm shift from ‘learning disabilities’ to ‘neurodiversity’ (Armstrong, 2015; Cooper, 2004; Griffiths & Horobin, 2018; Rentenbach et al., 2017; Shader, n.d.).

There is a case for working with the dyslexic brain, rather than trying to ‘remediate’ or ‘rewire’ it through intensive phonics based programs, which may produce accurate dyslexic readers, but at the expense of fluency and speed (Marshall, 2017; Shaywitz, 2003; Snowling & Hulme, 2011). I have discussed how the Davis Dyslexia methods correlate with and use the dyslexic brain functions, producing some remarkable results from those who experience these methods, whether partially or as an entire program (Davis & Braun, 2010; Marshall, 2018).

These techniques are easily administered by anyone with the book “The Gift of Dyslexia” (Davis & Braun, 2010), as clear instructions are scripted in it. The methods are easily adapted for classroom use as evidenced in some of the studies (Marshall, 2018; Pfeiffer et al., 2001). Its efficiency lies in the short duration of the intervention, although continued commitment to the symbol mastery clay work can be substantial. Its effectiveness is demonstrated in the fact that it has been found further intervention is not necessary and it fosters student agency and independence, as well as having positive psychological effects (Engelbrecht, 2005; Marshall, 2018; van Staden et al., 2009). Further research into this intervention method is certainly warranted.

Although I acknowledge that the majority of evidence lies with the phonologically based interventions, as a dyslexic who has experienced both forms of intervention, I have to confess to leaning towards the DD methods as more efficient and effective from my subjective view point. Reading “The Gift of Dyslexia” (Davis & Braun, 1994) when it was first published, was a revelation. I felt as if I was being described in minute detail and I felt validated for my experiences within the education system, which have not always been easy.

DD is an intervention created by a dyslexic for dyslexics. Its principles are being supported with research in neurobiology and psychology as these fields begin to have more influence on educational research. There is also an increasing call for inclusive practice and social justice within global educational systems, highlighting the need for a shift from creating disability from impairment by pathologizing neurodiverse thinkers, to embracing and appreciating the diversity that is the human condition (Armstrong, 2015; Collinson, 2012; Cooper, 2004; D. Griffiths & Horobin, 2018; Rentenbach et al., 2017). The reluctance to invest time and resources by the academic and scientific communities in conducting further studies on interventions such as this is succinctly put by Poole (2008): “It is my assertion that a major obstacle facing scientific progress is the apparent inability of many to allow creative thought without perceiving it as a threat” (Poole, 2008, p. 182).

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